

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with [bracketing]. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claims 70-73, AMEND claims 3-7 and 51-53, and ADD new claims 74-87, in accordance with the following:

1-2. (canceled)

3. (currently amended) A method to generate additional information to guarantee seamless playback, the method comprising:

generating data stream information for each of two or more data streams having packet data to which information on an arrival time of the respective packet data is added, the data stream information including seamless time control information and seamless playback information, which indicates whether a corresponding data stream is to be seamlessly reproduced after playback of a preceding data stream, [and/]or the seamless time control information, without the seamless playback information, to control an output time of the corresponding data stream to be seamlessly reproduced,

wherein the seamless time control information includes a reference time, [offset information and/or gap length information,] with the reference time being [based on arrival times of packet data of the preceding data stream and indicating] an output time of a first packet data of the corresponding data stream to be seamlessly reproduced; and

outputting the generated data stream information to a medium.

4. (currently amended) A method to generate additional information to guarantee seamless playback, the method comprising:

generating data stream information for each of two or more data streams having packet data to which information on an arrival time of the respective packet data is added, the data stream information including seamless time control information to control an output time of [the]a corresponding data stream to be seamlessly reproduced, or the seamless time control information and seamless playback information, the seamless playback information indicating

whether the corresponding data stream is to be seamlessly reproduced after playback of a preceding data stream.

wherein the seamless time control information includes an offset information, with the offset information being [based on arrival times of packet data of the preceding data stream and being] a value of a difference between an original arrival time of a first packet of the corresponding data stream to be seamlessly reproduced and an output time of the first packet of the corresponding data stream; and

outputting the generated data stream information to a medium.

5. (currently amended) A method to generate additional information to guarantee seamless playback, the method comprising: [The method of claim 4,]

generating data stream information for each of two or more data streams having packet data to which information on an arrival time of the respective packet data is added, the data stream information including seamless time control information to control an output time of a corresponding data stream to be seamlessly reproduced, or the seamless time control information and seamless playback information, the seamless playback information indicating whether the corresponding data stream is to be seamlessly reproduced after playback of a preceding data stream.

wherein seamless time control information includes gap length information, with the gap length information [is] being a value of an amount of time from an output time of a last packet of the preceding data stream to [a time at which] an output time of a first packet of the corresponding data stream to be seamlessly reproduced [must be output]; and

outputting the generated data stream information to a medium.

6. (currently amended) The method of claim [4]5, wherein the seamless time control information is valid only when the seamless information has a value indicating "seamless playback."

7. (currently amended) The method of claim [4]5, wherein each of the data streams includes a plurality of packs, each pack including the packet data to which information on the arrival time of the respective packet data is added, and an extra header which is added to the packet data with arrival time information.

8-50. (canceled)

51. (currently amended) A method to guarantee seamless playback of data streams, comprising:

generating data stream information for each of two or more data streams, each data stream having packet data including information on an arrival time of the respective packet data, the data stream information including seamless time control information to control an output time of a corresponding data stream to be seamlessly reproduced, or the seamless time control information and seamless playback information, the seamless playback information [that indicates]indicating whether [a respective]the corresponding data stream is to be seamlessly [played back]reproduced after playback of a preceding data stream; and

generating seamless playback of the two or more data streams[,] based on the data stream information [corresponding seamless playback information and/or seamless time control information for controlling an output time of the corresponding data stream to be seamlessly reproduced],

wherein the seamless time control information includes a reference time, [offset information and/or gap length information,] with the reference time being [based on arrival times of packet data of the preceding data stream and indicating] an output time of a first packet data of the corresponding data stream to be seamlessly reproduced.

52. (currently amended) A method to guarantee seamless playback of data streams, comprising:

generating data stream information for each of two or more data streams, each data stream having packet data including information on an arrival time of the respective packet data, the data stream information including seamless time control information to control an output time of a corresponding data stream to be seamlessly reproduced, or the seamless time control information and seamless playback information, the seamless playback information [that indicates]indicating whether [a respective]the corresponding data stream is to be seamlessly [played back]reproduced after playback of a preceding data stream; and

generating seamless playback of the two or more data streams[,] based on the data stream information [corresponding seamless playback information and/or seamless time control

information for controlling an output time of the corresponding data stream to be seamlessly reproduced],

wherein the seamless time control information includes [a reference time,] offset information [and/or gap length information], with the offset information [being obtained based on arrival times of packet data of a preceding data stream and] being a value of a difference between an original arrival time of a first packet of the corresponding data stream to be seamlessly reproduced and an output time of the first packet of the corresponding data stream.

53. (currently amended) A method to guarantee seamless playback of data streams, comprising: [The method of claim 51,]

generating data stream information for each of two or more data streams, each data stream having packet data including information on an arrival time of the respective packet data, the data stream information including seamless time control information to control an output time of a corresponding data stream to be seamlessly reproduced, or the seamless time control information and seamless playback information, the seamless playback information indicating whether the corresponding data stream is to be seamlessly reproduced after playback of a preceding data stream; and

generating seamless playback of the two or more data streams based on the data stream information,

wherein the seamless time control information includes gap length information, with the gap length information [is]being a value of an amount of time from an output time of a last packet of [a]the preceding data stream to [a time at which]an output time of a first packet of the corresponding data stream to be seamlessly reproduced [must be output].

54-73. (canceled)

74. (New) The method of claim 53, wherein the seamless time control information is valid only when the seamless information has a value indicating "seamless playback."

75. (New) The method of claim 53, wherein each of the data streams includes a plurality of packs, each pack including the packet data to which information on the arrival time of

the respective packet data is added, and an extra header which is added to the packet data with arrival time information.

76. (New) The method of claim 53, wherein the seamless time control information further includes a reference time and/or offset information, with the reference time being the output time of the first packet of the corresponding data stream, and the offset information being a value of a difference between an original arrival time of the first packet of the corresponding data stream and the output time of the first packet of the corresponding data stream.

77. (New) The method of claim 5, wherein the seamless time control information further includes a reference time and/or offset information, with the reference time being the output time of the first packet of the corresponding data stream, and the offset information being a value of a difference between an original arrival time of the first packet of the corresponding data stream and the output time of the first packet of the corresponding data stream.

78. (New) A method to generate additional information to guarantee seamless playback, the method comprising:

generating data stream information for each of two or more data streams, each data stream having packet data including information on an arrival time of the respective packet data, the data stream information including seamless time control information to control an output time of a corresponding data stream to be seamlessly reproduced, or the seamless time control information and seamless playback information, the seamless playback information indicating whether the corresponding data stream is to be seamlessly reproduced after playback of a preceding data stream,

wherein the seamless time control information includes a reference time, offset information and/or gap length information, with the gap length information being a value of an amount of time from an output time of a last packet of the preceding data stream to an output time of a first packet of the corresponding data stream to be seamlessly reproduced; and

reproducing the two or more data streams based on the generated data stream information.

79. (New) The method of claim 78, wherein the reference time is the output time of the first packet of the corresponding data stream, and the offset information is a value of a difference between an original arrival time of the first packet of the corresponding data stream

and the output time of the first packet of the corresponding data stream.

80. (New) The method of claim 78, wherein the seamless time control information is valid only when the seamless information has a value indicating "seamless playback."

81. (New) The method of claim 78, wherein each of the data streams includes a plurality of packs, each pack including the packet data to which information on the arrival time of the respective packet data is added, and an extra header which is added to the packet data with arrival time information.

82. (New) A method to generate additional information to guarantee seamless playback, the method comprising:

generating data stream information for each of two or more data streams having packet data to which information on an arrival time of the respective packet data is added, the data stream information including seamless playback information, which indicates whether a corresponding data stream is to be seamlessly reproduced after playback of a preceding data stream, and/or seamless time control information to control an output time of the corresponding data stream to be seamlessly reproduced, wherein the two or more data streams are transport streams; and

outputting the generated data stream information to a medium.

83. (New) The method of claim 82, wherein the transport streams are MPEG-TS transport streams.

84. (New) A method to guarantee seamless playback of data streams, comprising:
generating data stream information for each of two or more data streams having packet data to which information on an arrival time of the respective packet data is added, the data stream information including seamless playback information, which indicates whether a corresponding data stream is to be seamlessly reproduced after playback of a preceding data stream, and/or seamless time control information to control an output time of the corresponding data stream to be seamlessly reproduced; and

generating seamless playback of the two or more data streams based on the data stream information,

wherein the two or more data streams are transport streams.

85. (New) The method of claim 84, wherein the transport streams are MPEG-TS transport streams.

86. (New) A method to generate additional information to guarantee seamless playback, the method comprising:
generating data stream information for each of two or more data streams having packet data to which information on an arrival time of respective packet data is added, the data stream information including seamless playback information, which indicates whether a corresponding data stream is to be seamlessly reproduced after playback of a preceding data stream, and/or seamless time control information to control an output time of the corresponding data stream to be seamlessly reproduced, wherein the two or more data streams are transport streams; and
reproducing the two or more data streams based on the generated data stream information.

87. (New) The method of claim 86, wherein the transport streams are MPEG-TS transport streams.